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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,108	10/12/2005	Nobuo Mochizuki	20241/0203481-US0	8647
7278	7590	11/16/2007	EXAMINER	
DARBY & DARBY P.C.			HAVLIN, ROBERT H	
P.O. BOX 770			ART UNIT	
Church Street Station			PAPER NUMBER	
New York, NY 10008-0770			1626	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,108	Applicant(s) MOCHIZUKI ET AL.	
	Examiner Robert Havlin	Art Unit 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 7-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of the claims: Claims 1-13 are currently pending. Claim 13 was added in a preliminary amendment.

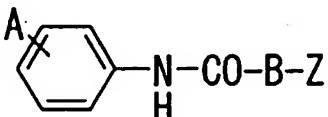
Priority: This application is a 371 of PCT/JP04/05237 04/13/2004 and claims foreign priority to JAPAN 2003-109667 (04/14/2003) and JAPAN 2004-023032 (01/30/2004).

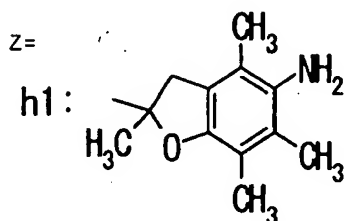
IDS: The IDS dated 10/13/2005 and 1/9/2006 were considered.

Election/Restrictions

1. Applicant correctly points out that there was a typo in the restriction requirement omitting claim 13 from group I. Applicant's election without traverse of Group I (claims 1-3, 5, 6, and 13) in the reply filed on 9/19/07 is acknowledged.

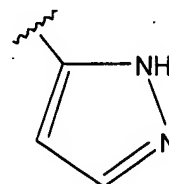
Applicant also elected the following species and claims 1-3, 5, 6, and 13 read thereupon:

Compound 37 which is described in Table 1 as: , wherein the variables are defines: A is 4-a2; B is -; and Z is h1. These variables are further defined such that:



A = 4-a2

a2: 1H-pyrazole-5-yl



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As detailed below, the elected species was unpatentable and in accordance with the election of species practice described in the requirement for restriction, subject matter not reading on the elected species is hereby withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, 6, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umeda et al. (US 6,342,516 or "'516" patent) in view of Hansch et al. (Substituent Constants for Correlation Analysis in Chemistry and Biology, (1979), Wiley, pages 1-63).

The claims are drawn to the elected species.

Prior art teachings

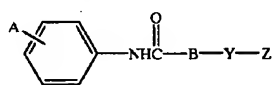
The '516 patent teaches numerous compounds as drugs with a therapeutic use including as an anti-oxidant. The patent discloses numerous compounds structurally related to those shown in table 3 below:

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US 6,342,516 B1

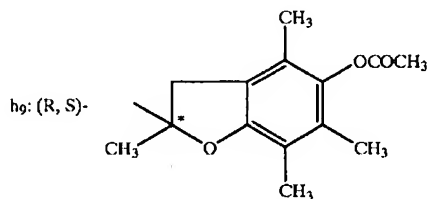
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TABLE 3

					
Compound No.	A*	B	Y	Z	Physical Constant [] m.p. ° C.
3-1	4-a1	—	—	h ₁	[229-231]
3-2	4-a1	—	—	h ₂	[219-222]
3-3	4-a1	—	—	h ₃	[220-222]
3-4	4-a1	CH ₂	—	h ₁	[126-129]
3-5	4-a1	CH ₂ CH ₂	—	h ₁	[112-114]
3-6	4-a1	CH(Me)CH ₂	—	h ₁	[137-142]
3-7	4-a1	CH ₂	N(Me)C(=O)	h ₁	amorphous & NMR1
3-8	4-a1	(CH ₂) ₅	NHC(=O)	h ₁	[194-196]
3-9	4-a1	—	—	h ₄	[232-233]
3-10	4-a1	CH ₂ CH ₂	—	h ₄	[110-113]
3-11	4-a1	CH ₂ CH ₂	—	h ₆	[104-107]
3-12	4-a1	(CH ₂) ₄	—	h ₄	[211-214]
3-13	4-a1	—	—	h ₉	[192-193]
3-14	4-a1	—	—	h ₈	[204-206]
3-15	4-a1	CH=CH	—	h ₄	[143-148]
3-16	4-a1	CH=CH-CH=CH	—	h ₄	[245-248]
3-17	4-a1	(CH ₂) ₄	—	h ₁	[211-214]
3-18	4-a1	—	—	h ₁₂	[184-187]
3-19	4-a2	—	—	h ₉	[203-206]
3-20	4-a1	—	—	h ₇	amorphous & NMR2
3-21	3-a1	—	—	h ₁	[207-210]
3-22	2-a1	—	—	h ₁	[191-196]
3-23	4-a3	—	—	h ₁	[203-206]
3-24	4-a5	—	—	h ₁	[166-167]
3-25	4-a2	—	—	h ₁	[215-218]
3-26	4-a2	CH ₂ CH ₂	—	h ₆	[195-196]
3-27	4-a1	(CH ₂) ₂ CH(Ph)	—	h ₁₄	amorphous & NMR3
3-28	4-a1	(CH ₂) ₃ CH(Ph)	—	h ₁₄	amorphous & NMR4
3-29	4-a1	(CH ₂) ₄	—	h ₁₄	[140-143]
3-30	4-a1	CH ₂ CH ₂	—	h ₁₄	[145-150]

Representing together the substitution site to the phenyl group.
& represents the NMR data are presented in Table 5.

Specifically, the compound No. "3-19" as described in Table 3 where: a2=1H-pyrazol-5-



yl; and h₉ =

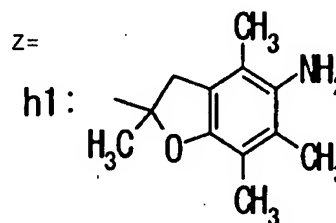
Hansch et al. teaches a well-known in the art methodology for arriving at the optimum drug based on making substitutions on aromatic rings with different substituents. The methodology uses a quantitative structure-activity relationship (QSAR) to guide a practitioner in a non-random manner to an optimum drug target.

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Specifically, in Table VI-I on pages 49-50 the reference teaches "well characterized aromatic substituents" including -NH_2 and -OCOCH_3 .

Differences between the prior art and the claims

The difference between the prior art and the elected species is the particular



substitution on the aromatic ring of the "Z" variable,

the elected species has -NH_2 , the '516 patent has -OCOCH_3 .

Where

Finding of prima facie obviousness: rationale and motivation

One of ordinary skill in the art had motivation to arrive at the elected species because of general knowledge about optimizing drug targets and the teachings of Hansch et al. to arrive at the optimum drug. In addition, the prior art and the instant invention are in the identical field of endeavor and are used for the same purpose of anti-oxidant. As evidenced by the teachings of the '516 patent on columns 17 and 18 the substitutions on the aromatic ring were a prime target for optimization. Furthermore, the reference also teaches the -OH substituent at the site in question thereby indicating that the substitution at this site was readily alterable while maintaining the function of the compound. Therefore, one of ordinary skill in the art would have found it obvious to make a substitution of -NH_2 on compound 3-19 in the '516 patent and arrive at the instant invention based on the QSAR methodology well-known in the art and exemplified by Hansch et al.

Claim Objections

Formula 1 is not depicted in the amended claim 1.

Conclusion

No claims are in condition for allowance.

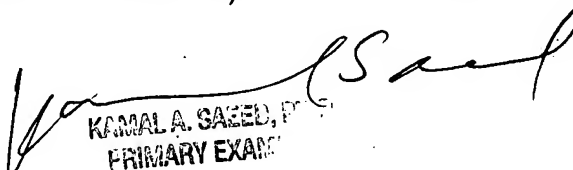
Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Havlin whose telephone number is (571) 272-9066. The examiner can normally be reached on Mon. - Fri., 7:30am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful the examiner's supervisor, Joe McKane can be reached at (571) 272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Robert Havlin
Examiner
RH


KAMALA A. SAEED, P.
PRIMARY EXAMINER